From: Will Walters <WWalters@aspeneg.com>
To: Eric Solorio <ESolorio@energy.state.ca.us>
Date: 3/10/2009 4:14 PM
Subject: FW: Canyon information to be docketed (NO. 1)
Attachments: GHG_calculations.xls

Eric,

Resending per your request. Both the spreadsheet and the e-mail chain should be docketed. First of two.

Will

From: Will Walters
Sent: Wednesday, February 25, 2009 10:17 AM
To: Eric Solorio
Subject: Canyon information to be docketed (NO. 1)

Eric,

This appears to not be docketed for Canyon, including Excel attachment, and it should be as I am using it as a reference. I'll forward additional such e-mails as necessary.

Will

From: Suzanne Wilson [mailto:SWilson@anaheim.net]
Sent: Wednesday, January 28, 2009 2:44 PM
To: Will Walters
Cc: 'Eric Solorio'
Subject: Minor Greenhouse Gas Data Requests and reminder on revised project information

Will,

Here are our response to the questions you asked in the email below:

1. The quantity of SF6 gas to be used in electrical equipment is 2650 lbs. The maximum guaranteed leakage rate is 0.5% / year, or 13 lbs / year. The expected leakage rate is less 0.2% / year, or 5 lbs / year.
2. To allow for competition, our specifications allow the use of refrigerant R123 and R134A and this will not be decided until our EPC is selected. However, since the quantitites and types of refrigerants are similar, I'm providing you with the following info rmation that has a guaranteed refrigerant leak rate of 0.5% per year: upstream chller has 3,600 lb charge x 0.005 = 18 lb/yr; downstream chiller has 3,600 lb charge x 0.005 = 18 lb/yr. Total annual refrigerant leakage is estimated to be 36 lb/yr.
3. See the above excel spreadsheet.
4. The original GHG emissions estimate remains the same since our revised hours of operations do not exceed the 4,000 hours of operation identified in the AFC. At 50 MW per CTG: 50 MW x 4 turbines x 1,001.5 hours = 200,300 MWH annually.

Please let me know if you have any questions regarding this information

From: Will Walters [mailto:WWalters@aspeneg.com]
Sent: Tuesday, January 20, 2009 10:21 AM
To: Suzanne Wilson

Cc: Steve Sciortino; Eric Solorio; Keith Golden; Matthew Layton
Subject: Canyon - Minor Greenhouse Gas Data Requests and reminder on revised project information
Suzanne,

Due to significant changes in our greenhouse gas (GHG) analysis approach since the project was initiated I need to ask for a little more information to complete that part of the AQ analysis for the project. Those questions are as follows:

1) Please identify the quantity of SF6 that will be used in electrical equipment required for the project and provide an annual leakage rate estimate.

2) Please identify the type and annual leakage rate for the chiller working fluid, which I assume is a hydrofluorocarbon that has a GHG equivalency.

3) Please calculate either the fuel use during construction (including offroad equipment, worker trips, and all delivery trip fuel use) or the CO2-eq emissions from construction activities.

4) Please identify the proper method for revising the original GHG emission estimate for turbine operations to account for the revised annual operating profile, which should also include the corresponding net MWh of generation so that we can properly evaluate the CO2-eq/MWh performance for the project.

Also, when providing the updated project information as requested during our conference call last week that corresponds to changes required for the PDOC, subsequent to the revised permit application material dated September 2008 and docketed in October 2008, please provide any and all modified air dispersion modeling analyses provided to the SCAQMD with all input and output files provided electronically.

Please let me know if you have any questions about any of these information requests. Thank you,

Will Walters, Aspen
818-597-3407 ext. 345

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On-Site Construction Greenhouse Gas Emission Calculation for the SCPPA Canyon Power Plant

		# of Units per Year[1]	Hours per Day[1]	Days per Month[1]	Months per Year	Load Factor[9] (%)	Horse-power[1]	BSFC[2] (lb/hp-hr)	Diesel Fuel Density (lb/gallon)	Diesel Fuel Used (gallons/ year)	Diesel HHV (MMBtu/ gallon)	CO_2 Emission Factor[3] (kg/gallon)	CH_4 Emission Factor[4] (kg/MMBtu)	N_2O Emission Factor[4] (kg/MMBtu)	Global Warming Potential Factor[5] for CO_2	Global Warming Potential Factor[5] for CH_4	Global Warming Potential Factor[5] for N_2O	Global Warming Potential CO_2 Emissions as CO_2e (MT/year)	Global Warming Potential CH_4 Emissions as CO_2e (MT/year)	Global Warming Potential N_2O Emissions as CO_2e (MT/year)	Total (MT/year)
Off-road Equipment	Grader	3	8	22	12	0.61	120	0.367	7.09	24,007	0.137	10.14	0.003	0.0006	1	21	310	2.43E+02	2.07E-01	6.12E-01	2.44E+02
	Dozer	2	8	22	12	0.58	175	0.367	7.09	22,193	0.137	10.14	0.003	0.0006	1	21	310	2.25E+02	1.92E-01	5.66E-01	2.26E+02
	Scraper	1	8	22	12	0.72	175	0.367	7.09	13,775	0.137	10.14	0.003	0.0006	1	21	310	1.40E+02	1.19E-01	3.51E-01	1.40E+02
	Vibrator	2	8	22	12	0.62	50	0.408	7.09	7,535	0.137	10.14	0.003	0.0006	1	21	310	7.64E+01	6.50E-02	1.92E-01	7.67E+01
	Loader	2	8	22	12	0.54	100	0.408	7.09	13,126	0.137	10.14	0.003	0.0006	1	21	310	1.33E+02	1.13E-01	3.34E-01	1.34E+02
	Forklift	23	8	22	12	0.60	100	0.408	7.09	167,721	0.137	10.14	0.003	0.0006	1	21	310	1.70E+03	1.45E+00	4.27E+00	1.71E+03
	Backhoe	17	8	22	12	0.55	100	0.408	7.09	113,637	0.137	10.14	0.003	0.0006	1	21	310	1.15E+03	9.81E-01	2.90E+00	1.16E+03
	Crane	21	8	22	12	0.43	300	0.367	7.09	296,158	0.137	10.14	0.003	0.0006	1	21	310	3.00E+03	2.56E+00	7.55E+00	3.01E+03
	Port air compressor	10	8	22	12	0.62	50	0.408	7.09	37,676	0.137	10.14	0.003	0.0006	1	21	310	3.82E+02	3.25E-01	9.60E-01	3.83E+02
	Light plant	10	3	22	12	0.62	50	0.408	7.09	14,129	0.137	10.14	0.003	0.0006	1	21	310	1.43E+02	1.22E-01	3.60E-01	1.44E+02
																				Total =	**7.22E+03**

		Vehicle Duty	Annual VMT for All Units[1]	Fuel Type	CO_2 Emission Factor[6&7] (kg/mile)	CH_4 Emission Factor[8] (kg/mile)	N_2O Emission Factor[8] (kg/mile)	Global Warming Potential Factor[5] for CO_2	Global Warming Potential Factor[5] for CH_4	Global Warming Potential Factor[5] for N_2O	Global Warming Potential CO_2 Emissions as CO_2e (MT/year)	Global Warming Potential CH_4 Emissions as CO_2e (MT/year)	Global Warming Potential N_2O Emissions as CO_2e (MT/year)	Total (MT/year)
On-road Vehicles	Field truck (3/4T)	Passenger	169	Gasoline	0.50	0.0000147	0.0000079	1	21	310	8.41E-02	5.22E-05	4.14E-04	8.46E-02
	Dump truck	HHD	169	Diesel	1.91	0.0000051	0.0000048	1	21	310	3.23E-01	1.81E-05	2.51E-04	3.23E-01
	Water truck	HHD	1901	Diesel	1.91	0.0000051	0.0000048	1	21	310	3.63E+00	2.04E-04	2.83E-03	3.63E+00
	Boom truck	HHD	111	Diesel	1.91	0.0000051	0.0000048	1	21	310	2.12E-01	1.19E-05	1.65E-04	2.12E-01
	Concrete pump truck	HHD	51	Diesel	1.91	0.0000051	0.0000048	1	21	310	9.74E-02	5.46E-06	7.59E-05	9.75E-02
	Heavy delivery truck	HHD	86	Diesel	1.91	0.0000051	0.0000048	1	21	310	1.64E-01	9.21E-06	1.28E-04	1.64E-01
	Light delivery truck	Light	238	Gasoline	1.24	0.0000157	0.0000101	1	21	310	2.94E-01	7.85E-05	7.45E-04	2.95E-01
	Worker vehicles in laydown area	Passenger	3064	Gasoline	0.50	0.0000147	0.0000079	1	21	310	1.53E+00	9.46E-04	7.50E-03	1.53E+00
													Total =	**6.34E+00**
														Total On-Site Emissions = **7.23E+03**

[1] AFC for the Canyon Power Plant, Appendix B2 - Construction Emissions, Annual Combustion Emissions table

[2] EPA Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression-Ignition, April 2004, Table A2.

[3] CARB Regulation for the Mandatory reporting of Greenhouse Gas Emissions, December 2, 2008, Appendix A, Table 4.

[4] CARB Regulation for the Mandatory reporting of Greenhouse Gas Emissions, December 2, 2008, Appendix A, Table 6.

[5] CARB Regulation for the Mandatory reporting of Greenhouse Gas Emissions, December 2, 2008, Appendix A, Table 2.

[6] SCAQMD CEQA Handbook, EMFAC2007 (version 2.3) Emissions Factors for On-Road Passenger Vehicles & Delivery Trucks, March 2007, Scenario Year 2009.

[7] SCAQMD CEQA Handbook, EMFAC2007 (version 2.3) Emissions Factors for On-Road Heavy-Heavy-Duty Diesel Trucks, March 2007, Scenario Year 2009.

[8] CARB Regulation for the Mandatory reporting of Greenhouse Gas Emissions, December 2, 2008, Appendix A, Table 8.

[9] EPA Nonroad Engine and Vehicle Emission Study Report, November 2001, Table 2-05.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *CANYON POWER PLANT PROJECT*

Docket No. 07-AFC-9

PROOF OF SERVICE
(Revised 2/25/2009)

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DECLARATION OF SERVICE

I, Maria Santourdjian, declare that on March 11, 2009, I served and filed copies of the attached CofA Greenhouse Gas Data Response. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[http://www.energy.ca.gov/sitingcases/canyon/index.html]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

For service to all other parties:

__✓__ sent electronically to all email addresses on the Proof of Service list;

__✓__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

__✓__ **sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);**

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Maria Santourdjian